Section 4
Suggested Process for Using the CAHSEE to Increase Student Achievement

A Dynamic Process

Implementing standards-based instruction is a dynamic process that utilizes resources as they become available. One such resource is the released test questions from the CAHSEE. Another is the information contained in this document. The suggested process that follows will assist teachers in using the released questions and other resources to analyze their instructional program. A goal for this document is to identify where schools or districts are on the continuum of implementing standards-based instruction in mathematics and help teachers move forward in that activity. It is expected that schools will use the following material to refine and adjust these activities as appropriate to their own instructional programs.

Generating answers to the following questions will begin the process:

- What are the mathematical concepts being assessed by the CAHSEE?
- Where does this content fit in the district's standards-based instructional program?
- Are there areas being assessed that need to be added to the program?

To answer these questions, a five-step process is suggested. The following is a summary of the process with key questions for each step. A worksheet for this process is found in Appendix B.

Step One
Use the CAHSEE released questions and this Teacher Guide to identify the mathematics concepts being assessed.

- What are the mathematics standards being assessed?
- What content, knowledge, and skills of the content standards should students experience to be successful with the CAHSEE?

Step Two
See the CAHSEE in perspective with the California mathematics content standards and other statewide assessments.

- How do the standards assessed on the California Standards Tests (CST) compare with those on the CAHSEE?

- How do the tests relate to each other in terms of the standards assessed?
- How do the standards assessed by the California Standards Tests support and reinforce those standards on the CAHSEE?
- How do the constructs and foundational skills for the standards assessed on the CAHSEE inform instruction and curriculum?
- What is the mathematics for which students are being held accountable on these assessments?

Step Three
Take a closer look at instructional issues revealed through this process.

- Where are the content, knowledge, and skills of the standards to be assessed being introduced in the curriculum?
- Where are the content, knowledge, and skills of the standards to be assessed being practiced, remediated, and reinforced?
- What other content areas (science, etc.) apply, review, and practice these standards?

Step Four
Use the CAHSEE school and student data for curricular and instructional planning.

- What areas of strength are indicated by this information?
- What areas of weakness are indicated by this information?
- Are there curricular areas where individual students need further opportunities to practice, review, and/or remediate their mathematics content, knowledge, and skills?

Step Five
Use issues identified in steps one, two, three, and four to begin the process of program planning and implementation.

- How will you ensure that all students have multiple opportunities to learn, practice, remediate, and reinforce these content standards?
- How will you regularly assess students to ensure their success?

Step One

Use the CAHSEE Released Questions to Identify Mathematics Concepts Being Assessed.

Purpose
The goal of this first step is to use the released questions to develop an awareness of the mathematics concepts being assessed by the CAHSEE. Individual teachers, mathematics departments, districts, or larger groups may use this process. It is important to adjust this process, depending on the size of the group, in order to cover the full range of mathematics content of the CAHSE test questions. A minimum of 20 test questions must be reviewed in order to gain maximum benefits.

Materials
- Local curriculum
- Released questions from the CAHSEE
- CAHSEE blueprint (Appendix A)
- CAHSEE Teacher Guide

Activity
This activity is for a group of at least 20 participants. The process will work, however, with an individual teacher or group of teachers. A discussion of the questions by a group of several math teachers will be richer than one with only a few teachers, but the efforts of the small group will also lead them to the goal.

A. Divide into groups of four to five people.
1) Have each group work through five test questions from the released CAHSEE questions, using a collaborative process.
2) Based on the released items just reviewed, identify the mathematics content being assessed by each question.
3) Identify the content, knowledge, and skills should students experience to be successful with the CAHSEE.

B. Share the discussion from each small group with the total group. The broad spectrum of mathematics content covered by these items should be identified.

Step Two

See the CAHSEE in Perspective with the California Mathematics Content Standards and Other Statewide Assessments.

Purpose
To gain a deeper understanding of how students are being held accountable for the California Mathematics Content Standards through the CAHSEE and other statewide assessments.

Materials
- Worksheet (in Appendix B)
- CAHSEE Teacher Guide
- California Mathematics Content Standards
- Available information about other statewide assessments (CAT/6, GSE, MDTP, and ELM)

Activity
A. Divide into groups of four to five people. Discuss various assessments—tools, type, source, purpose, grades, and when tested—with the total group: CAHSEE, the CAT/6, California Standards Tests (CST), Golden State Examinations (GSE), Mathematics Diagnostic Testing Program (MDTP), and the Entry Level Mathematics test (ELM). Discuss the following questions:
   - How do the standards assessed on the CST compare with those on the CAHSEE?
   - How do the tests relate to each other in terms of the standards assessed?
   - How do the standards assessed by the CST support and reinforce those standards on the CAHSEE?
   - What is the mathematics content for which students are being held accountable on these assessments?

B. Examine the sample questions and discussions of the content standards contained in this Teacher Guide.
   - What are the components and foundational skills in the identified standards?
   - Which component of the standards do the sample questions address?

C. In small groups, use the test questions reviewed in step one and in the Teacher Guide to discuss the following questions:
   - Which standards are assessed by each of the questions reviewed? List each standard on the worksheet found in Appendix B.
   - What component(s) and foundational skills for the identified standards were addressed in each item?
   - What additional components might be assessed on the CAHSEE for this standard?

D. Continue in small groups to:
   - Write questions for each component of at least two standards assessed by the CAHSEE. (Teachers are encouraged to continue this process with other standards as they work with the California Mathematics Content Standards throughout the year.)
   - Fill in the first two rows of the worksheet in Appendix B as more standards and items are reviewed.
   - Determine the multiple-choice options. (It is not necessary to have all options for multiple-choice items in the beginning of this process. When students are given the questions, the possible errors may be generated). These multiple-choice questions can be used for review of the content with students.

E. Finish the small group activity with a discussion of additional questions:
   - How do the components and foundational skills for these standards inform instruction and curriculum?
   - How are the components and foundational skills supported and reinforced by the California Standards Tests?

F. Share small group insights with the total group.

NOTE: Many teachers find the level of the standards being assessed in CAHSEE lower than the high school level. However, these standards are foundational skills for all higher-level mathematics courses. This fact indicates that the curriculum at all grade levels needs to be adjusted to help students attain more comprehensive mathematics at all grade levels. Other California standards at the high school level are being assessed by the California Standards Tests and the Golden State Exams.

Step Three

Take a Closer Look at Instructional Issues Revealed Through this Process.

Purpose
To identify what is currently being taught in comparison to what students should be taught for achievement on the CAHSEE and the California Mathematics Content Standards.

Materials
- Released CAHSEE test questions
- CAHSEE blueprint (Appendix A)
- Local curriculum
- Worksheet (in Appendix B)
- California Mathematics Content Standards and/or California Mathematics Framework

Activity
Use the California Mathematics Content Standards or the California Mathematics Framework for this step of the process.

Based on the problems reviewed, the content discussed, and the state content standards identified, consider the standards for which all students are being held accountable and discuss related curricular issues. Use the worksheet in Appendix B to document this discussion. The following questions may be helpful:
- At what grade level are the content, knowledge, and skills being introduced in the curriculum?
- At what grade level are the content, knowledge, and skills being practiced, remediated, and/or reinforced?
- What are other content areas (science, etc.) that use applications where these mathematics standards are being reviewed and practiced?

Teachers should recognize that reviewing, reinforcing, and/or remediating are ongoing activities.

Step Four

Use the CAHSEE school and student data for curricular and instructional planning.

Purpose
To identify areas of strength and weakness for school and individual students related to curriculum and instruction.

Materials
- School Report from the most recent CAHSEE administration
- Student and Parent Report from the most recent CAHSEE administration
- Data on the released test questions obtained from the CAHSEE website

Activity

A. Review the School Report. It shows:
The mean scale score (between 250 and 450)
The number and percent of students who passed (at or above scale score of 350)
The average percent correct for all students
The average percent correct for all students by mathematical strand

B. Review the Student Report. It shows:
The student's scale score (between 250 and 450)
Pass or no pass
Number of questions, number correct, and percent correct for each strand

C. Review the data (p-values) on the released test questions and the corresponding data for the district and school.

D. While analyzing the data, ask the following questions to give curricular and instructional guidance, using the worksheet in Appendix B to document the discussion:
   - What areas of strength are indicated by this information?
   - What areas of weakness are indicated by this information?
   - What are areas of the curriculum where individual students need further opportunities to review, reinforce, and/or remediate their mathematics knowledge and skills?

Step Five

Use issues identified in steps one, two, three, and four to begin the process of program planning and implementation.

Purpose
To apply the information gathered through this process to develop specific strategies for increasing student achievement with the CAHSEE and the California Mathematics Content Standards.

Materials
- Local curriculum
- CAHSEE released test questions
- CAHSEE blueprint (Appendix A)
- CAHSEE Teacher Guide
- Completed worksheet (in Appendix B)
- Planning tool (in Appendix B)

Activity
Using the completed worksheet from Appendix B, begin planning how the district, school, or teacher will ensure that the necessary mathematics content is accessible to all students. Consider the following:
- How will you ensure that all students have multiple opportunities to learn, practice, remediate, and reinforce the content standards?
- Use the planning tool in Appendix B to help develop your district, school, and/or classroom plan. The first row has been filled in as a model.